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Supplement of

Global warming potential estimates for the C₁–C₃ hydrochlorofluorocarbons (HCFCs) included in the Kigali Amendment to the Montreal Protocol

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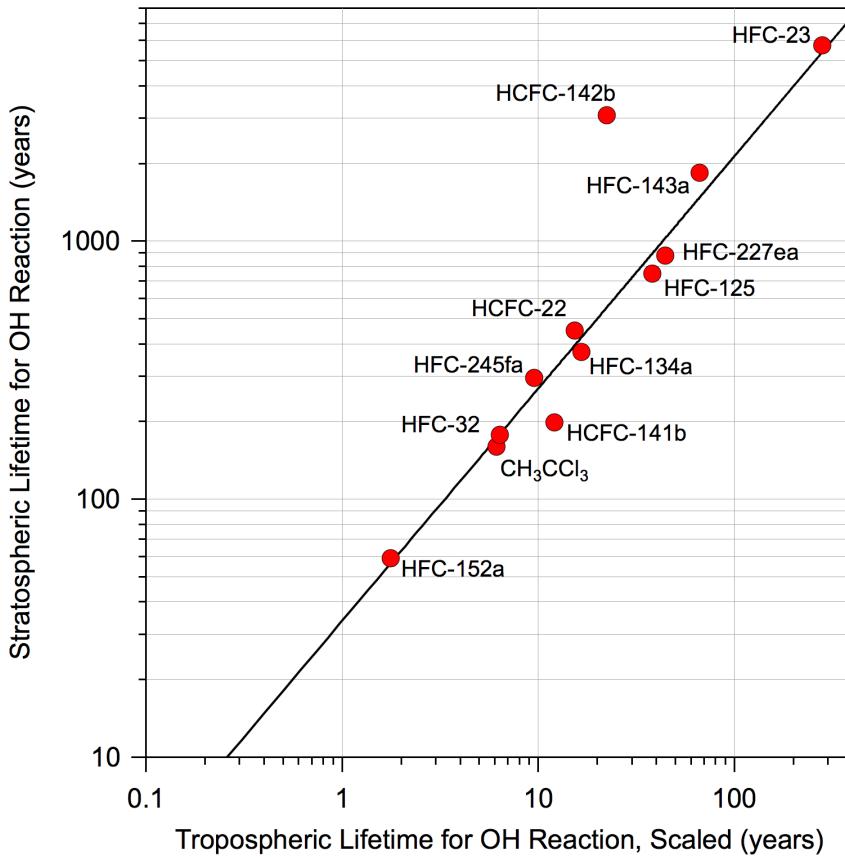


Figure S1. Correlation between the tropospheric and stratospheric lifetimes for OH reactive loss calculated using the 2-D atmospheric model results for the HCFCs and HFCs reported in the SPARC (Ko et al., 2013) lifetime report. The stratospheric lifetime has been corrected for O¹D reactive loss using reactive rate coefficients reported in Burkholder et al. (2015) and estimated lifetimes as described in the text. The line is a fit to the data, $\text{Log}_{10}(\tau_{\text{Strat}}^{\text{OH}}) = 1.528 + 0.901 \text{ Log}_{10}(\tau_{\text{Trop}}^{\text{OH}})$. HCFC-142b was not included in the fit. The 2-D model calculated tropospheric lifetimes were scaled to the recommended CH_3CCl_3 tropospheric lifetime of 6.1 years.

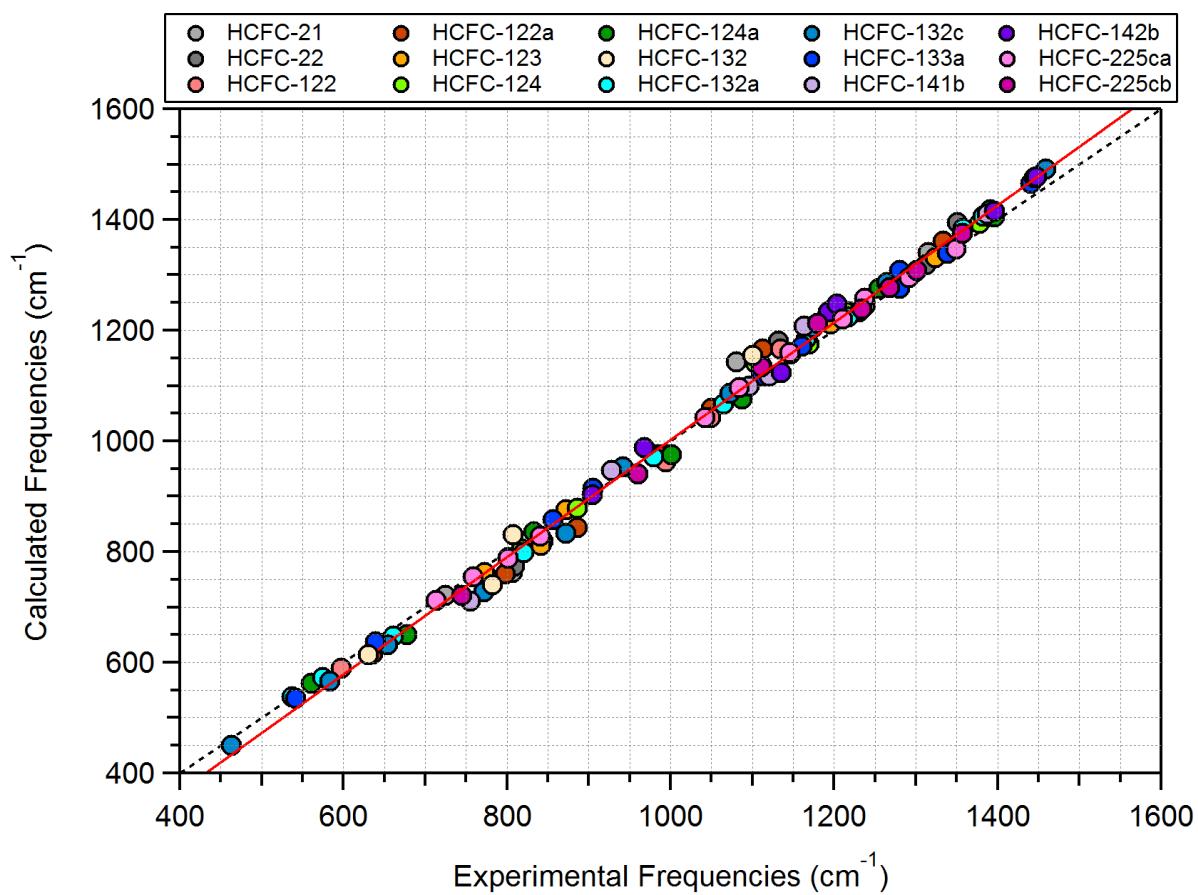


Figure S2. Comparison of experimentally measured and calculated infrared absorption spectrum frequencies for the HCFCs listed in the legend. The dashed line represents a 1:1 correlation. The correlation was used to derive a linear frequency correction (red line) for the calculated HCFC spectra in this study.

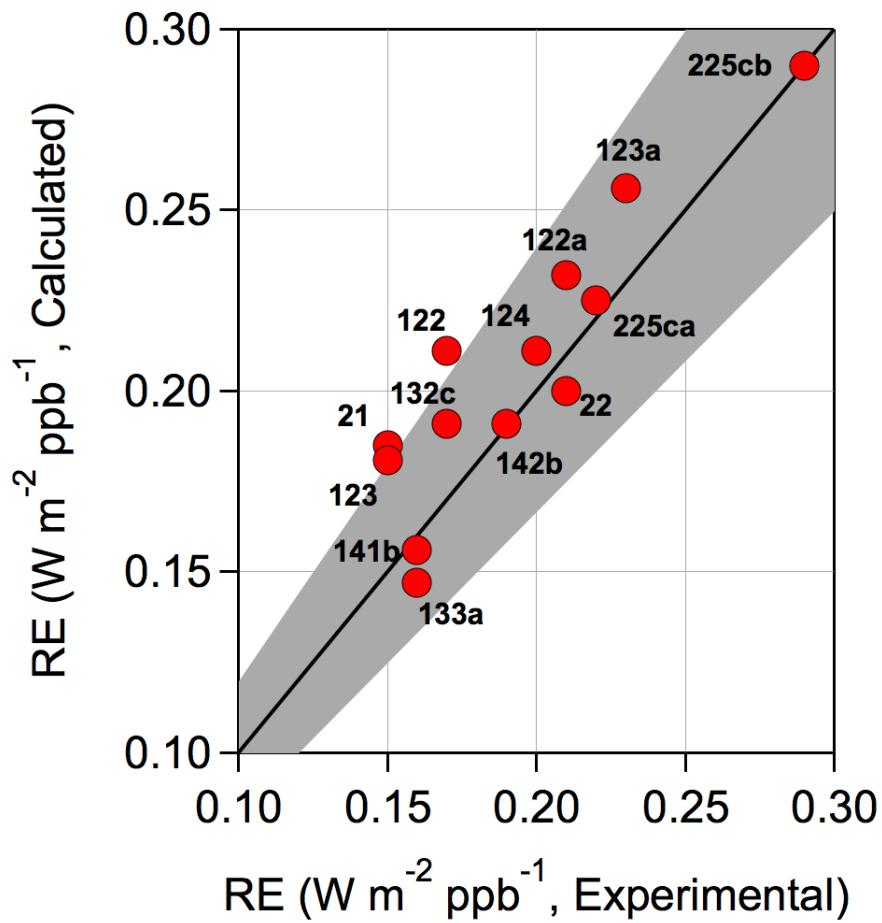


Figure S3: Comparison of experimental and calculated “lifetime corrected” radiative efficiencies (REs) for the training dataset HCFCs. The solid line is the 1:1 correlation. The gray shaded region represents $\pm 20\%$ around the 1:1 line. Note that the spread in REs without applying the “lifetime correction” is $\sim \pm 10\%$.

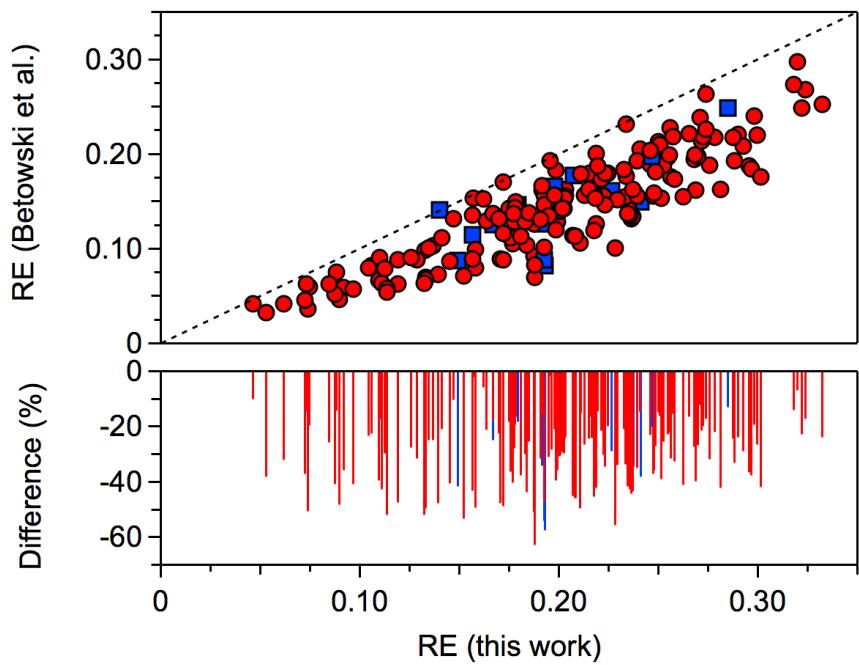


Figure S4. Comparison of radiative efficiencies (RE) ($\text{W m}^{-2} \text{ ppbv}^{-1}$) calculated in this work and reported in Betowski et al. (2015). The HCFCs that have experimentally derived RE values are shown in blue (rectangles and lines). The dashed line is the 1:1 correlation. The bottom panel shows the percent difference between this work and that of Betowski et al. for each of the HCFCs.

Table S1. Data used to derive the empirical correlation of fractional release factor (FRF) versus stratospheric lifetime, τ_{Strat} . Stratospheric lifetimes were taken from the 2-D model results given in the SPARC (Ko et al., 2013) lifetime report. The FRFs were taken from WMO assessment (WMO, 2014).

Molecule	Fractional Release Factor (FRF)	Stratospheric Lifetime (τ_{Strat}) (years)
CFC-11	0.47	55
CFC-12	0.23	95.5
CFC-113	0.29	88.4
CFC-114	0.12	191
CFC-115	0.04	664
Halon-1202	0.62	36
Halon-1211	0.62	41
Halon-1301	0.28	73.5
Halon-2402	0.65	41
CH ₃ Cl	0.44	30.4
CCl ₄	0.56	44
CH ₃ CCl ₃	0.67	38
HCFC-22	0.13	161
HCFC-141b	0.34	72.3
HCFC-142b	0.17	212
CH ₃ Br	0.60	26.3

Table S2. Summary of estimated lifetimes, ozone depletion potentials (ODP), radiative efficiencies (REs), global warming potentials (GWPs), and global temperature change potentials (GTPs) for the C₁-C₃ hydrochlorofluorocarbons (HCFCs) included in this work. The GWP and GTP values are consistent with the CO₂ radiative forcing used in the IPCC (2013) and WMO (2014) assessments.

HCFC	Formula	Lifetimes (years)								Ozone Depletion Potential (ODP)	Radiative Efficiency (RE) W m ⁻² ppb ⁻¹	Global Warming Potential (Time Horizon, years)		Global Temperature change Potential (Time Horizon, years)		
		Global	Total Trop	Total Strat	Total OH Reactive Loss	Trop OH Reactive Loss	Strat OH Reactive Loss	O(D) Reactive Loss	UV Photolysis Loss			20	100	20	50	100
21	CHFCl ₂	2.66	2.87	36.4	2.780	2.87	87.2	285	80	0.053	0.185	1078	292	438	53	41
22	CHF ₂ Cl	8.09	8.67	119.8	8.365	8.67	236.2	529	450	0.032	0.2	3847	1138	2661	344	162
31	CH ₂ FCl	0.897	0.927	27.7	0.901	0.927	31.5	463	450	0.015	0.0587	173	47	55	8	7
121	CHCl ₂ CCl ₂ F	1.11	1.17	20.0	1.137	1.17	38.9	185	50	0.030	0.183	244	66	80	11	9
121a	CHClFCCl ₃	2.67	2.96	27.3	2.863	2.96	89.6	185	50	0.066	0.18	582	158	237	29	22
122	CHCl ₂ CCl ₂ F	1.39	1.47	24.5	1.430	1.47	47.8	195	67.9	0.030	0.211	389	105	133	18	15
122a	CHClFCCl ₂ F	3.2	3.54	34.1	3.422	3.54	105.3	195	67.9	0.060	0.232	988	268	434	50	37
122b	CHF ₂ CCl ₃	9.31	12.6	35.5	12.154	12.6	331.1	195	50	0.170	0.213	2326	713	1702	253	102
123	CHCl ₂ CF ₃	1.81	1.92	30.8	1.861	1.92	60.7	285	80	0.026	0.181	480	130	173	23	18
123a	CHClFCClF ₂	4.16	4.45	63.8	4.304	4.45	129.5	285	225	0.038	0.256	1558	425	778	84	60
123b	CHF ₂ CCl ₂ F	11.8	15.1	53.8	14.525	15.1	389.0	285	80	0.124	0.24	3394	1125	2694	528	167
124	CHClFCCl ₃	5.47	5.8	98.0	5.600	5.8	164.3	529	450	0.018	0.211	1860	517	1070	114	73
124a	CHF ₂ CClF ₂	17	19	161.2	18.266	19	478.6	529	450	0.026	0.241	4677	1826	4088	1258	327
131	CHCl ₂ CHClF	0.752	0.786	20.0	0.764	0.786	27.1	185	67.9	0.019	0.101	113	31	36	5	4
131a	CH ₂ CICCl ₂ F	2.57	2.8	31.4	2.711	2.8	85.3	185	67.9	0.056	0.169	647	175	259	32	24
131b	CH ₂ FCCl ₃	2.33	2.55	26.2	2.473	2.55	78.5	185	50	0.054	0.132	456	123	176	22	17
132	CHClFCHClF	1.73	1.81	39.1	1.759	1.81	57.7	264	225	0.025	0.152	438	119	156	21	17
132a	CHCl ₂ CHF ₂	1.12	1.18	23.9	1.144	1.18	39.1	264	80	0.020	0.131	246	67	81	12	9
132b	CH ₂ CICClF ₂	4.84	5.21	67.0	5.039	5.21	149.4	264	225	0.048	0.202	1602	441	864	92	62
132c	CH ₂ FCCl ₂ F	3.76	4.14	40.8	4.005	4.14	121.4	264	80	0.054	0.191	1194	325	566	63	45
133	CHClFCHF ₂	3.07	3.21	67.8	3.109	3.21	96.5	463	450	0.017	0.173	1008	273	434	51	38
133a	CH ₂ CIClF ₃	9.82	10.6	126.5	10.262	10.6	284.1	463	450	0.026	0.147	2386	743	1782	280	107
133b	CH ₂ FCClF ₂	7.21	7.71	110.0	7.443	7.71	212.5	463	450	0.024	0.206	2640	762	1736	206	108
141	CH ₂ CICHClF	1.14	1.19	29.5	1.153	1.19	39.4	247	225	0.022	0.0772	170	46	56	8	6
141a	CH ₂ FCHCl ₂	0.494	0.51	20.0	0.498	0.51	20.0	247	80	0.011	0.0594	56	15	17	3	2
141b	CH ₂ CCl ₂ F	8.33	10	49.3	9.666	10	269.2	247	80	0.122	0.156	2269	676	1589	211	96
142	CH ₂ CICHF ₂	2.61	2.73	60.1	2.643	2.73	83.4	411	450	0.019	0.11	643	174	259	32	24
142a	CH ₂ FCHClF	1.58	1.64	42.3	1.591	1.64	52.7	411	450	0.015	0.113	399	108	139	19	15
142b	CH ₂ CClF ₂	16.6	18.7	147.6	17.958	18.7	471.3	411	450	0.041	0.191	4969	1916	4319	1291	336
151	CH ₂ CICH ₂ F	0.487	0.5	20.0	0.488	0.5	20.0	370	450	0.008	0.0306	41	11	12	2	2
151a	CH ₃ CHClF	1.16	1.2	33.2	1.165	1.2	39.7	370	450	0.015	0.0629	199	54	66	9	7
221aa	CHCl ₂ CCl ₂ CCl ₂ F	0.929	0.979	20.0	0.951	0.979	33.1	185	50	0.027	0.183	142	38	46	7	5
221ab	CHClFCCl ₂ CCl ₃	2.67	2.96	27.3	2.863	2.96	89.6	185	50	0.069	0.181	404	109	164	20	15
221ba	CHCl ₂ CClFCCl ₃	1.11	1.17	20.0	1.137	1.17	38.9	185	50	0.032	0.174	161	44	53	8	6
221da	CCl ₃ CHCl ₂ CCl ₂ F	3.29	3.71	29.0	3.592	3.71	110.0	185	50	0.083	0.243	668	181	297	34	25
221ea	CCl ₃ CHFCCl ₃	3.51	3.99	29.5	3.859	3.99	117.3	185	50	0.088	0.219	644	175	295	33	24
222aa	CHCl ₂ CCl ₂ CClF ₂	1.11	1.17	20.0	1.137	1.17	38.9	185	50	0.028	0.224	221	60	73	10	8
222ab	CHClFCCl ₂ CCl ₂ F	2.67	2.96	27.3	2.863	2.96	89.6	185	50	0.061	0.234	557	151	226	28	21
222ac	CHF ₂ CCl ₂ CCl ₃	9.29	12.6	35.2	12.154	12.6	331.1	185	50	0.191	0.221	1616	495	1182	175	71
222ba	CHCl ₂ CClFCCl ₂ F	1.11	1.17	20.0	1.137	1.17	38.9	185	50	0.028	0.21	207	56	68	10	8
222bb	CHClFCClFCCl ₃	3.15	3.54	28.6	3.422	3.54	105.3	185	50	0.071	0.199	557	151	243	28	21
222ca	CHCl ₂ CF ₂ CCl ₃	1.38	1.47	21.6	1.430	1.47	47.8	185	50	0.034	0.205	253	68	86	12	10
222da	CCl ₃ CHClCICCl ₂ F	4.48	5.23	31.2	5.055	5.23	149.8	185	50	0.097	0.283	1118	306	580	62	43
222db	CCl ₃ CHClCIClF ₂	4.62	5.42	31.4	5.236	5.42	154.6	185	50	0.100	0.265	1077	296	568	61	41
222ea	CCl ₃ CHFCCl ₂ F	4.68	5.49	31.5	5.306	5.49	156.5	185	50	0.101	0.245	1007	276	534	57	39

HCFC	Formula	Lifetimes (years)								Ozone Depletion Potential (ODP)	Radiative Efficiency (RE) W m ⁻² ppb ⁻¹	Global Warming Potential (Time Horizon, years)	Global Temperature change Potential (Time Horizon, years)			
		Global	Total Trop	Total Strat	Total OH Reactive Loss	Trop OH Reactive Loss	Strat OH Reactive Loss	O(D) ⁱ Reactive Loss	UV Photolysis Loss				20	100	20	50
223aa	CHCl ₂ CCl ₂ CF ₃	1.11	1.17	20.0	1.137	1.17	38.9	185	50	0.024	0.195	205	56	68	10	8
223ab	CHClFCCl ₂ CCl ₂ F	3.18	3.54	31.4	3.422	3.54	105.3	185	59	0.059	0.282	854	232	374	43	32
223ac	CHF ₂ CCl ₂ CCl ₂ F	9.29	12.6	35.2	12.154	12.6	331.1	185	50	0.164	0.289	2262	693	1654	245	99
223ba	CHCl ₂ CClFCClF	1.39	1.47	23.1	1.430	1.47	47.8	185	59	0.029	0.258	341	92	116	16	13
223bb	CHClFCCl ₂ CCl ₂ F	3.18	3.54	31.4	3.422	3.54	105.3	185	59	0.059	0.235	713	193	312	36	27
223bc	CHF ₂ CClFCCl ₃	10.6	15.1	35.7	14.525	15.1	389.0	185	50	0.185	0.249	2135	682	1638	282	99
223ca	CHCl ₂ CF ₂ CCl ₂ F	1.38	1.47	21.6	1.430	1.47	47.8	185	50	0.029	0.234	308	83	105	15	12
223cb	CHClFCF ₂ CCl ₃	3.88	4.45	30.2	4.304	4.45	129.5	185	50	0.073	0.238	877	239	422	46	33
223da	CCl ₂ FCHCICCClF	6.48	7.86	37.1	7.582	7.86	216.1	185	59	0.111	0.313	1849	525	1157	130	74
223db	CCl ₃ CHClClF ₃	6.47	8.02	33.4	7.742	8.02	220.2	185	50	0.117	0.229	1351	383	844	94	54
223ea	CCl ₂ CHFCFCClF	6.28	7.74	33.2	7.467	7.74	213.1	185	50	0.114	0.282	1619	457	997	110	64
223eb	CCl ₃ CHFCClF ₂	6.46	8.02	33.4	7.734	8.02	220.0	185	50	0.117	0.262	1545	438	966	108	62
224aa	CHClFCCl ₂ CCl ₃	3.15	3.54	28.9	3.422	3.54	105.3	195	50	0.049	0.247	796	216	347	40	30
224ab	CHF ₂ CCl ₂ CClF ₂	11.3	15.1	44.6	14.525	15.1	389.0	195	67.9	0.141	0.306	2935	957	2298	426	141
224ba	CHCl ₂ CClFCF ₃	1.39	1.47	24.5	1.430	1.47	47.8	195	67.9	0.023	0.215	307	83	105	14	12
224bb	CHClFCClFCClF ₂	4.1	4.45	51.2	4.304	4.45	129.5	195	150	0.047	0.283	1182	322	585	64	45
224bc	CHF ₂ CClFCCl ₃ F	11.3	15.1	44.6	14.525	15.1	389.0	195	67.9	0.141	0.308	2962	966	2319	430	142
224ca	CHCl ₂ CF ₂ CClF ₂	1.79	1.92	27.5	1.861	1.92	60.7	195	67.9	0.028	0.262	483	131	173	23	18
224cb	CHClFCF ₂ CCl ₂ F	1.57	1.64	35.0	1.593	1.64	52.8	195	225	0.022	0.248	400	108	139	19	15
224cc	CHF ₂ CF ₂ CCl ₃	12.5	19	36.7	18.266	19	478.6	195	50	0.174	0.314	3213	1090	2598	549	165
224da	CCl ₃ CHClCICClF ₂	10.4	12.3	67.1	11.813	12.3	322.7	195	150	0.096	0.349	3176	1006	2418	405	146
224db	CCl ₂ FCHCIClF ₃	9.39	12	43.4	11.546	12	316.1	195	67.9	0.119	0.285	2416	743	1775	266	107
224ea	CCl ₂ CHFCFCClF ₂	9.16	11.6	43.3	11.200	11.6	307.5	195	67.9	0.117	0.312	2601	794	1892	276	114
224eb	CCl ₃ CHFCF ₃	8.88	11.9	35.3	11.435	11.9	313.3	195	50	0.126	0.235	1915	580	1376	194	83
225aa	CHF ₂ CCl ₂ CF ₃	11.8	15.1	53.8	14.525	15.1	389.0	285	80	0.094	0.264	2818	934	2237	438	139
225ba	CHClFCClFCF ₃	4.2	4.45	74.3	4.304	4.45	129.5	285	450	0.025	0.254	1172	320	588	64	45
225bb	CHF ₂ CClFCClF ₂	15.9	19	99.5	18.266	19	478.6	285	225	0.069	0.319	4033	1526	3475	992	260
225ca	CHCl ₂ CF ₂ CF ₃	1.81	1.92	30.8	1.861	1.92	60.7	285	80	0.020	0.225	451	122	162	22	17
225cb	CHClFCF ₂ CClF ₂	5.36	5.8	71.2	5.600	5.8	164.3	285	225	0.034	0.29	1685	468	959	102	66
225cc	CHF ₂ CF ₂ CCl ₂ F	14.1	19	55.2	18.266	19	478.6	285	80	0.110	0.344	4081	1458	3412	840	232
225da	CCl ₃ CHClClF ₃	16.3	19.5	100.0	18.753	19.5	490.1	285	225	0.071	0.302	3858	1476	3342	980	256
225ea	CCl ₃ CHFCFCClF ₂	15.3	18.1	98.7	17.447	18.1	459.1	285	225	0.068	0.34	4211	1562	3594	977	260
225eb	CCl ₂ FCHFCF ₃	13.4	17.7	54.8	17.053	17.7	449.8	285	80	0.105	0.287	3306	1154	2725	627	179
226ba	CHF ₂ CClFCCl ₃	17	19	161.2	18.266	19	478.6	529	450	0.019	0.267	3792	1480	3314	1020	265
226ca	CHClFCF ₂ CCl ₃	5.47	5.8	98.0	5.600	5.8	164.3	529	450	0.013	0.261	1681	467	967	103	66
226cb	CHF ₂ CF ₂ CClF ₂	21.6	24.7	173.6	23.763	24.7	607.2	529	450	0.022	0.341	5370	2388	4920	1976	539
226da	CF ₃ CHClClF ₃	27.7	32.6	185.2	31.292	32.6	778.8	529	450	0.025	0.251	4323	2216	4111	2081	667
226ea	CCl ₃ CHFCF ₃	24.9	28.8	180.2	27.695	28.8	697.4	529	450	0.023	0.307	5095	2452	4771	2193	649
231aa	CHCl ₂ CCl ₂ CHClF	0.799	0.839	20.0	0.815	0.839	28.8	185	50	0.022	0.128	98	27	31	5	4
231ab	CH ₂ CCl ₂ CCl ₂ CF ₃	1.61	1.73	23.0	1.674	1.73	55.2	185	50	0.042	0.18	278	75	97	13	10
231ac	CH ₂ FCCl ₂ CCl ₃	2.33	2.55	26.2	2.473	2.55	78.5	185	50	0.058	0.156	348	94	135	17	13
231ba	CHCl ₂ CClFC ₂ Cl ₂	0.561	0.586	20.0	0.570	0.586	20.8	185	50	0.015	0.114	62	17	19	3	2
231bb	CH ₂ CIClFCCl ₃	2.54	2.8	26.9	2.711	2.8	85.3	185	50	0.063	0.163	397	108	158	20	15
231da	CHCl ₂ CHClCCl ₂ F	0.535	0.557	20.0	0.542	0.557	20.0	185	50	0.015	0.136	70	19	22	3	3
231db	CHClFC ₂ CHClCCl ₃	1.34	1.43	21.3	1.390	1.43	46.6	185	50	0.036	0.144	186	50	63	9	7
231ea	CHCl ₂ CHFCFCl ₃	0.762	0.799	20.0	0.777	0.799	27.6	185	50	0.021	0.131	96	26	30	4	4
231fa	CCl ₂ FC ₂ CCl ₃	6.26	7.71	33.2	7.443	7.71	212.5	185	50	0.143	0.213	1226	346	755	83	49
232aa	CHClFCCl ₂ CHClF	1.65	1.77	24.9	1.715	1.77	56.4	185	59	0.036	0.177	303	82	107	14	11
232ab	CHCl ₂ CCl ₂ CHF ₂	1.01	1.07	20.0	1.041	1.07	35.9	185	50	0.024	0.143	150	41	49	7	6
232ac	CH ₂ CCl ₂ CCl ₂ CClF ₂	2.56	2.8	29.3	2.711	2.8	85.3	185	59	0.053	0.222	587	159	235	29	22
232ad	CH ₂ FCCl ₂ CCl ₂ F	2.33	2.55	26.2	2.473	2.55	78.5	185	50	0.050	0.213	513	139	198	25	19

HCFC	Formula	Lifetimes (years)								Ozone Depletion Potential (ODP)	Radiative Efficiency (RE) W m ⁻² ppb ⁻¹	Global Warming Potential (Time Horizon, years)	Global Temperature change Potential (Time Horizon, years)			
		Global	Total Trop	Total Strat	Total OH Reactive Loss	Trop OH Reactive Loss	Strat OH Reactive Loss	O(¹ D) Reactive Loss	UV Photolysis Loss				20	100	20	50
232ba	CHCl ₂ CClFCHClF	0.988	1.04	20.0	1.010	1.04	35.0	185	59	0.023	0.162	165	45	54	8	6
232bb	CH ₂ CICCIFCCl ₂ F	2.56	2.8	29.3	2.711	2.8	85.3	185	59	0.053	0.222	587	159	235	29	22
232bc	CH ₂ FCClFCCl ₃	3.64	4.14	29.7	4.005	4.14	121.4	185	50	0.075	0.205	766	208	357	40	29
232ca	CHCl ₂ CF ₂ CHCl ₂	0.704	0.737	20.0	0.716	0.737	25.6	185	50	0.017	0.13	95	26	30	4	4
232cb	CH ₂ ClCF ₂ CCl ₃	4.47	5.21	31.2	5.039	5.21	149.4	185	50	0.090	0.208	951	260	492	53	37
232da	CHCl ₂ CHClCClF ₂	0.82	0.859	20.0	0.835	0.859	29.4	185	59	0.019	0.178	151	41	48	7	6
232db	CHClFCHClCCl ₂ F	1.51	1.61	24.0	1.558	1.61	51.7	185	59	0.033	0.2	312	84	108	15	12
232dc	CHF ₂ CHClCCl ₃	2.83	3.15	27.8	3.048	3.15	94.8	185	50	0.060	0.184	539	146	224	27	20
232ea	CHCl ₂ CHFCCl ₂ F	0.829	0.872	20.0	0.847	0.872	29.8	185	50	0.019	0.165	142	38	45	7	5
232eb	CHClFCHFCCl ₃	2.04	2.22	25.1	2.154	2.22	69.3	185	50	0.045	0.183	387	105	144	19	15
232fa	CCl ₂ CCl ₂ CCl ₂ F	9.23	12.5	35.2	12.050	12.5	328.5	185	50	0.176	0.267	2254	689	1644	242	99
232fb	CCl ₂ CH ₂ CClF ₂	10.2	14.4	35.6	13.828	14.4	372.1	185	50	0.194	0.249	2260	713	1712	282	103
233aa	CHClFCCl ₂ CHF ₂	2.63	2.87	31.6	2.774	2.87	87.1	185	67.9	0.043	0.185	542	147	219	27	20
233ab	CH ₂ CICC ₂ CF ₃	2.57	2.8	31.4	2.711	2.8	85.3	185	67.9	0.042	0.194	556	151	223	27	21
233ac	CH ₂ FCCl ₂ CClF ₂	3.71	4.14	35.3	4.005	4.14	121.4	185	67.9	0.057	0.25	1030	280	485	54	39
233ba	CHClFCClFCHClF	2.1	2.23	37.8	2.157	2.23	69.4	185	150	0.031	0.202	475	129	178	23	18
233bb	CHCl ₂ CClFCHF ₂	1.27	1.34	23.3	1.303	1.34	44.0	185	67.9	0.023	0.171	242	66	81	11	9
233bc	CH ₂ CICC ₂ CClF ₂	4.75	5.21	53.3	5.039	5.21	149.4	185	150	0.057	0.261	1365	375	729	78	53
233bd	CH ₂ FCClFCCl ₂ F	3.71	4.14	35.3	4.005	4.14	121.4	185	67.9	0.057	0.257	1058	288	498	55	40
233ca	CHCl ₂ CF ₂ CHClF	1.27	1.34	23.3	1.302	1.34	43.9	185	67.9	0.023	0.174	247	67	83	12	9
233cb	CH ₂ ClCF ₂ CCl ₂ F	4.57	5.21	37.3	5.039	5.21	149.4	185	67.9	0.069	0.25	1264	347	663	71	49
233cc	CH ₂ FCF ₂ CCl ₃	6.26	7.71	33.2	7.443	7.71	212.5	185	50	0.100	0.246	1651	466	1016	112	66
233da	CHCl ₂ CHClCF ₃	0.896	0.939	20.0	0.913	0.939	31.9	185	67.9	0.017	0.142	142	38	45	7	5
233db	CHClFCHClCClF ₂	2.37	2.52	40.1	2.443	2.52	77.6	185	150	0.034	0.238	630	171	245	31	24
233dc	CHF ₂ CHClCCl ₂ F	3.55	3.96	34.8	3.827	3.96	116.5	185	67.9	0.055	0.245	969	263	447	50	37
233ea	CHCl ₂ CHFCClF ₂	0.982	1.03	20.4	1.002	1.03	34.7	185	67.9	0.019	0.183	201	54	65	9	8
233eb	CHClFCHFCCl ₂ F	2.32	2.51	30.2	2.428	2.51	77.2	185	67.9	0.038	0.221	571	155	221	28	22
233ec	CHF ₂ CHFCCl ₃	4.13	4.77	30.6	4.614	4.77	137.9	185	50	0.068	0.236	1081	295	537	58	41
233fa	CCl ₂ FC ₂ CClF ₂	15.4	23.3	45.7	22.386	23.3	575.3	185	67.9	0.207	0.321	4017	1496	3434	942	250
233fb	CCl ₂ CH ₂ CF ₃	16.4	29.3	37.3	28.157	29.3	707.9	185	50	0.247	0.204	2636	1011	2286	676	176
234aa	CHF ₂ CCl ₂ CHF ₂	6.51	7.54	47.4	7.281	7.54	208.3	264	80	0.062	0.198	1499	426	940	105	60
234ab	CH ₂ FCCl ₂ CF ₃	3.76	4.14	40.8	4.005	4.14	121.4	264	80	0.039	0.215	979	267	464	51	37
234ba	CHClFCClFCHF ₂	3.39	3.61	56.9	3.489	3.61	107.1	264	225	0.028	0.215	883	240	398	45	34
234bb	CH ₂ CICC ₂ CF ₃	4.84	5.21	67.0	5.039	5.21	149.4	264	225	0.035	0.218	1264	348	682	73	49
234bc	CH ₂ FCClFCClF ₂	7.01	7.71	77.3	7.443	7.71	212.5	264	225	0.045	0.279	2244	645	1457	170	91
234ca	CHClFCCl ₂ CHClF	2.74	2.9	51.0	2.806	2.9	88.0	264	225	0.025	0.205	684	185	281	34	26
234cb	CHCl ₂ CF ₂ CHF ₂	1.65	1.74	29.2	1.691	1.74	55.7	264	80	0.020	0.199	399	108	140	19	15
234cc	CH ₂ ClCF ₂ CClF ₂	9.46	10.6	85.1	10.262	10.6	284.1	264	225	0.054	0.267	2709	834	1995	301	120
234cd	CH ₂ FCF ₂ CCl ₂ F	6.64	7.71	47.6	7.443	7.71	212.5	264	80	0.063	0.281	2159	615	1367	155	87
234da	CHClFCHClCCl ₃	2.67	2.82	50.3	2.731	2.82	85.9	264	225	0.024	0.203	658	178	268	33	25
234db	CHF ₂ CHClCClF ₂	5.69	6.18	71.5	5.964	6.18	173.9	264	225	0.039	0.271	1819	508	1067	115	71
234ea	CHCl ₂ CHFCF ₃	1.06	1.11	23.1	1.076	1.11	37.0	264	80	0.014	0.158	204	55	67	10	8
234eb	CHClFCHFCClF ₂	2.88	3.04	52.4	2.947	3.04	92.0	264	225	0.026	0.241	842	228	353	42	32
234ec	CHF ₂ CHFCCl ₂ F	5.32	6.04	45.1	5.829	6.04	170.4	264	80	0.052	0.276	1748	485	991	106	68
234fa	CCl ₂ CH ₂ CClF ₂	31	43.4	108.4	41.582	43.4	1007.2	264	225	0.132	0.347	6220	3402	5999	3323	1166
234fb	CCl ₂ FC ₂ CCl ₃	26.2	47.6	58.1	45.576	47.6	1094.4	264	80	0.215	0.264	4499	2230	4245	2043	627
235ba	CHF ₂ CClFCHF ₂	8.8	9.5	120.7	9.156	9.5	256.3	463	450	0.018	0.225	2371	716	1698	238	102
235bb	CH ₂ FCClFCCl ₃	7.21	7.71	110.0	7.443	7.71	212.5	463	450	0.017	0.237	2139	618	1407	167	87
235ca	CH ₂ ClCF ₂ CF ₃	9.82	10.6	126.5	10.262	10.6	284.1	463	450	0.018	0.215	2451	764	1830	288	110
235cb	CHClFCCl ₂ CHF ₂	4.45	4.7	85.2	4.540	4.7	135.9	463	450	0.014	0.234	1376	377	711	76	53
235cc	CH ₂ FCF ₂ CClF ₂	14.2	15.7	145.8	15.157	15.7	404.3	463	450	0.021	0.282	4040	1448	3384	838	231

HCFC	Formula	Lifetimes (years)								Ozone Depletion Potential (ODP)	Radiative Efficiency (RE) W m ⁻² ppb ⁻¹	Global Warming Potential (Time Horizon, years)	Global Temperature change Potential (Time Horizon, years)			
		Global	Total Trop	Total Strat	Total OH Reactive Loss	Trop OH Reactive Loss	Strat OH Reactive Loss	O(¹ D) Reactive Loss	UV Photolysis Loss				20	100	20	50
235da	CHF ₂ CHClCF ₃	7.55	8.09	112.5	7.804	8.09	221.8	463	450	0.017	0.227	2128	620	1429	175	88
235ea	CHClFCHFCF ₃	7.36	7.88	111.1	7.605	7.88	216.7	463	450	0.017	0.227	2088	605	1386	167	86
235eb	CHF ₂ CHFCCl ₂	3.18	3.33	69.4	3.225	3.33	99.8	463	450	0.012	0.274	1163	315	509	59	44
235fa	CClF ₂ CH ₂ CF ₃	61.7	88.6	203.8	84.644	88.6	1916.2	463	450	0.051	0.297	6787	5327	6941	5741	3434
241aa	CH ₂ CICCl ₂ CHCIF	1.43	1.52	23.5	1.479	1.52	49.3	185	59	0.035	0.116	187	51	64	9	7
241ab	CH ₂ FCCl ₂ CHCl ₂	0.765	0.803	20.0	0.780	0.803	27.7	185	50	0.020	0.0937	81	22	25	4	3
241ac	CH ₂ CCl ₂ CCl ₂ F	5.18	6.18	32.1	5.970	6.18	174.1	185	50	0.112	0.191	1091	302	610	65	42
241ba	CH ₂ CICClFCHCl ₂	0.788	0.826	20.0	0.802	0.826	28.4	185	59	0.020	0.121	108	29	34	5	4
241bb	CH ₂ CClFCCl ₃	7.76	10	34.3	9.666	10	269.2	185	50	0.163	0.191	1543	452	1049	131	64
241da	CHCl ₂ CHCICHClF	0.558	0.581	20.0	0.566	0.581	20.7	185	59	0.014	0.1	63	17	19	3	2
241db	CH ₂ CICClCCl ₂ F	0.528	0.549	20.0	0.534	0.549	20.0	185	59	0.014	0.119	71	19	22	3	3
241dc	CH ₂ FCHCICCl ₃	0.75	0.786	20.0	0.764	0.786	27.2	185	50	0.019	0.115	97	26	31	5	4
241ea	CHCl ₂ CHFCCHCl ₂	0.416	0.429	20.0	0.420	0.429	20.0	185	50	0.011	0.0812	38	10	12	2	1
241eb	CH ₂ CICHFCCl ₃	1.05	1.11	20.0	1.078	1.11	37.1	185	50	0.027	0.125	147	40	48	7	6
241fa	CHCl ₂ CH ₂ CCl ₂ F	0.533	0.555	20.0	0.540	0.555	20.0	185	50	0.014	0.117	70	19	22	3	3
241fb	CHClFCH ₂ CCl ₃	1.48	1.59	22.2	1.540	1.59	51.1	185	50	0.037	0.152	254	69	87	12	10
242aa	CHF ₂ CCl ₂ CH ₂ Cl	2.13	2.29	29.3	2.220	2.29	71.2	185	67.9	0.039	0.131	341	92	128	17	13
242ab	CH ₂ FCCl ₂ CHCIF	1.78	1.91	27.3	1.849	1.91	60.4	185	67.9	0.034	0.132	288	78	103	14	11
242ac	CH ₂ CCl ₂ CClF ₂	8.09	10	41.9	9.666	10	269.2	185	67.9	0.125	0.227	2061	610	1426	185	87
242ba	CHClFCClFCCH ₂ Cl	1.99	2.11	36.7	2.042	2.11	66.0	185	150	0.033	0.151	371	100	137	18	14
242bb	CHCl ₂ CClFCF ₂ F	1.03	1.09	21.0	1.056	1.09	36.4	185	67.9	0.021	0.133	169	46	55	8	6
242bc	CH ₂ CClFCCl ₂ F	8.09	10	41.9	9.666	10	269.2	185	67.9	0.125	0.244	2221	657	1537	199	93
242ca	CHCl ₂ CF ₂ CH ₂ Cl	1.09	1.15	21.6	1.116	1.15	38.2	185	67.9	0.022	0.144	193	52	63	9	7
242cb	CH ₃ CF ₂ CCl ₃	12.3	18.7	36.3	17.958	18.7	471.3	185	50	0.206	0.251	3043	1027	2450	508	155
242da	CHClFCHCICHClF	1.32	1.38	29.2	1.338	1.38	45.1	185	150	0.024	0.147	237	64	80	11	9
242db	CHCl ₂ CHCICHF ₂	0.729	0.761	20.0	0.739	0.761	26.4	185	67.9	0.015	0.119	106	29	33	5	4
242dc	CH ₂ CICHCClF ₂	1.2	1.25	27.6	1.217	1.25	41.4	185	150	0.023	0.17	251	68	83	12	9
242dd	CH ₂ FCHCICCl ₂ F	0.832	0.871	20.0	0.846	0.871	29.8	185	67.9	0.017	0.159	162	44	52	8	6
242ea	CHCl ₂ CHFCHClF	0.724	0.756	20.0	0.735	0.756	26.2	185	67.9	0.015	0.119	106	29	33	5	4
242eb	CH ₂ CICHFCCl ₂ F	1.24	1.31	23.0	1.267	1.31	42.9	185	67.9	0.025	0.167	253	68	84	12	10
242ec	CH ₂ FCHFCCl ₃	1.7	1.84	23.5	1.780	1.84	58.3	185	50	0.034	0.174	363	98	129	17	14
242fa	CHCl ₂ CH ₂ CClF ₂	0.735	0.768	20.0	0.746	0.768	26.6	185	67.9	0.015	0.153	138	37	43	6	5
242fb	CHClFCH ₂ CCl ₂ F	1.61	1.71	26.1	1.662	1.71	54.8	185	67.9	0.031	0.203	400	108	140	19	15
242fc	CHF ₂ CCl ₂ CCl ₃	4.14	4.78	30.6	4.625	4.78	138.2	185	50	0.075	0.198	997	272	496	54	38
243aa	CHF ₂ CCl ₂ CH ₂ F	2.99	3.25	37.3	3.145	3.25	97.5	247	80	0.036	0.154	619	168	264	31	23
243ab	CH ₂ CCl ₂ CF ₃	8.33	10	49.3	9.666	10	269.2	247	80	0.085	0.205	2091	623	1465	195	89
243ba	CHF ₂ CClFCCH ₂ Cl	3.63	3.88	58.0	3.748	3.88	114.3	247	225	0.033	0.146	713	194	332	37	27
243bb	CHFCICClFCF ₂ H ₂	2.67	2.82	49.7	2.733	2.82	85.9	247	225	0.027	0.161	578	157	235	29	22
243bc	CH ₂ CClFC ₂ Cl	15.6	18.7	94.2	17.958	18.7	471.3	247	225	0.088	0.264	4005	1498	3431	952	252
243ca	CH ₂ CICF ₂ CHClF	2.89	3.14	36.9	3.038	3.14	94.5	247	80	0.035	0.182	708	192	297	35	27
243cb	CHCl ₂ CF ₂ CH ₂ F	1.46	1.54	27.3	1.491	1.54	49.7	247	80	0.020	0.147	289	78	99	14	11
243cc	CH ₂ CF ₂ CFCl ₂	13.8	18.7	53.5	17.958	18.7	471.3	247	80	0.134	0.284	4057	1437	3374	809	226
243da	CHF ₂ CHCICHFCI	1.97	2.07	41.9	2.009	2.07	65.0	247	225	0.022	0.162	430	116	158	21	16
243db	CH ₂ CICHClCF ₃	1.44	1.51	34.5	1.461	1.51	48.8	247	225	0.018	0.138	268	73	92	13	10
243dc	CH ₂ FCHCICF ₂ Cl	2.03	2.13	42.6	2.066	2.13	66.7	247	225	0.023	0.203	556	151	206	27	21
243ea	CHFCICCHFCF ₂ I	1.57	1.64	36.3	1.587	1.64	52.6	247	225	0.019	0.172	363	98	127	17	14
243eb	CHCl ₂ CHFCHF ₂	0.898	0.938	20.9	0.911	0.938	31.8	247	80	0.014	0.141	170	46	55	8	6
243ec	CH ₂ CICFCF ₂ Cl	1.7	1.78	38.3	1.728	1.78	56.8	247	225	0.020	0.182	417	113	148	20	16
243ed	CH ₂ FCHFCFCl ₂	2.03	2.17	31.9	2.101	2.17	67.7	247	80	0.026	0.215	587	159	218	28	22
243fa	CHCl ₂ CH ₂ CF ₃	0.78	0.813	20.0	0.790	0.813	28.0	247	80	0.012	0.12	126	34	40	6	5
243fb	CHFCICH ₂ CF ₂ Cl	2.24	2.36	45.1	2.283	2.36	73.0	247	225	0.024	0.231	699	189	267	34	26

HCFC	Formula	Lifetimes (years)								Ozone Depletion Potential (ODP)	Radiative Efficiency (RE) W m ⁻² ppb ⁻¹	Global Warming Potential (Time Horizon, years)	Global Temperature change Potential (Time Horizon, years)			
		Global	Total Trop	Total Strat	Total OH Reactive Loss	Trop OH Reactive Loss	Strat OH Reactive Loss	O(¹ D) Reactive Loss	UV Photolysis Loss				20	100	20	50
243fc	CHF ₂ CH ₂ CFCl ₂	5.07	5.73	44.0	5.532	5.73	162.5	247	80	0.056	0.263	1759	486	973	103	68
244ba	CH ₂ FCClFCF ₂	5.17	5.49	90.5	5.299	5.49	156.3	411	450	0.017	0.173	1308	362	731	78	51
244bb	CH ₂ CClFCF ₃	16.6	18.7	147.6	17.958	18.7	471.3	411	450	0.027	0.238	4130	1592	3590	1073	279
244ca	CH ₂ CICF ₂ CHF ₂	6.39	6.82	100.9	6.586	6.82	190.3	411	450	0.018	0.173	1577	447	980	109	63
244cb	CH ₂ FCF ₂ CHFCl	4.02	4.24	78.6	4.097	4.24	123.9	411	450	0.015	0.178	1061	289	520	57	41
244cc	CH ₂ CF ₂ Cl	31.2	38.1	173.3	36.563	38.1	896.6	411	450	0.039	0.277	6130	3369	5918	3300	1166
244da	CHF ₂ CHClCHF ₂	3.88	4.09	77.0	3.954	4.09	120.0	411	450	0.015	0.182	1053	287	507	56	40
244db	CH ₂ FCHClCF ₃	2.44	2.54	57.4	2.464	2.54	78.2	411	450	0.012	0.164	596	162	234	29	23
244ea	CHF ₂ CHFCFCl	2.39	2.5	56.6	2.417	2.5	76.9	411	450	0.012	0.191	684	185	267	33	26
244eb	CH ₂ CICHFCF ₃	2.04	2.12	50.8	2.059	2.12	66.5	411	450	0.011	0.151	460	124	171	22	17
244ec	CH ₂ FCHFCF ₂ Cl	2.88	3.01	64.0	2.918	3.01	91.1	411	450	0.013	0.226	974	264	408	49	37
244fa	CHFCICH ₂ CF ₃	2.37	2.48	56.3	2.399	2.48	76.4	411	450	0.012	0.185	658	178	256	32	25
244fb	CHF ₂ CH ₂ CF ₂ Cl	7.76	8.35	110.7	8.055	8.35	228.3	411	450	0.020	0.285	3053	895	2076	260	127
251aa	CH ₂ FCCl ₂ CH ₂ Cl	1.26	1.34	23.3	1.296	1.34	43.8	185	67.9	0.028	0.0752	129	35	43	6	5
251ab	CH ₂ CCl ₂ CHFCl	1.73	1.85	26.9	1.795	1.85	58.8	185	67.9	0.037	0.11	260	70	93	12	10
251ba	CH ₂ CICCIFCH ₂ Cl	1.34	1.4	29.4	1.359	1.4	45.7	185	150	0.027	0.0951	173	47	59	8	7
251bb	CH ₂ CClFCHCl ₂	1.02	1.07	20.9	1.042	1.07	35.9	185	67.9	0.023	0.109	152	41	49	7	6
251da	CH ₂ CHClCICHFCl	0.693	0.719	20.0	0.699	0.719	25.1	185	150	0.016	0.0821	77	21	24	4	3
251db	CH ₂ FCHClCHCl ₂	0.404	0.416	20.0	0.408	0.416	20.0	185	67.9	0.009	0.0631	35	9	11	2	1
251dc	CH ₂ CHClCFCl ₂	0.515	0.535	20.0	0.521	0.535	20.0	185	67.9	0.012	0.122	85	23	26	4	3
251ea	CH ₂ CICHFCHCl ₂	0.473	0.489	20.0	0.478	0.489	20.0	185	67.9	0.011	0.0776	50	14	15	2	2
251eb	CH ₂ CHFCCl ₃	0.678	0.709	20.0	0.690	0.709	24.8	185	50	0.016	0.134	124	34	39	6	5
251fa	CHClFC ₂ CCl ₂ H	0.331	0.339	20.0	0.333	0.339	20.0	185	67.9	0.008	0.0739	33	9	10	2	1
251fb	CH ₂ CICH ₂ CCl ₂ F	0.452	0.467	20.0	0.457	0.467	20.0	185	67.9	0.011	0.107	66	18	20	3	2
251fc	CH ₂ FCH ₂ CCl ₃	0.646	0.676	20.0	0.657	0.676	23.7	185	50	0.015	0.103	91	25	28	4	3
252aa	CH ₂ FCCl ₂ CH ₂ F	1.94	2.07	31.0	2.007	2.07	65.0	231	80	0.029	0.105	307	83	113	15	12
252ab	CH ₂ CCl ₂ CHF ₂	4.41	4.93	41.9	4.762	4.93	141.9	231	80	0.056	0.153	1006	275	517	55	39
252ba	CH ₂ CICCIFCH ₂ F	2.19	2.31	44.0	2.236	2.31	71.7	231	225	0.027	0.0992	329	89	125	16	12
252bb	CH ₂ CClFCHClF	2.87	3.04	50.9	2.941	3.04	91.8	231	225	0.032	0.147	637	173	266	32	24
252ca	CH ₂ CICF ₂ CH ₂ Cl	2.47	2.61	47.0	2.525	2.61	80.0	231	225	0.029	0.126	470	127	186	23	18
252cb	CH ₂ CF ₂ CHCl ₂	1.19	1.25	24.4	1.215	1.25	41.3	231	80	0.019	0.146	263	71	87	12	10
252da	CH ₂ CICHClCHF ₂	0.999	1.04	26.7	1.007	1.04	34.9	231	225	0.016	0.0897	135	37	44	6	5
252db	CH ₂ FCHClCHClF	1.15	1.2	29.4	1.162	1.2	39.7	231	225	0.017	0.101	176	48	58	8	7
252dc	CH ₂ CHClCIClF ₂	0.771	0.799	22.2	0.776	0.799	27.6	231	225	0.013	0.149	173	47	55	8	7
252ea	CH ₂ CICHFCHClF	1.02	1.06	27.2	1.033	1.06	35.7	231	225	0.016	0.112	174	47	57	8	7
252eb	CH ₂ FCHFCHCl ₂	0.645	0.67	20.0	0.652	0.67	23.5	231	80	0.011	0.0922	90	24	28	4	3
252ec	CH ₂ CHFCCl ₂ F	0.845	0.882	20.0	0.857	0.882	30.1	231	80	0.015	0.175	223	60	71	10	8
252fa	CHClFC ₂ CHClF	1.15	1.19	29.4	1.158	1.19	39.5	231	225	0.017	0.143	248	67	82	12	9
252fb	CHCl ₂ CH ₂ CHF ₂	0.657	0.684	20.0	0.665	0.684	23.9	231	80	0.011	0.114	113	31	35	5	4
252fc	CH ₂ CHClCCl ₂ F	0.937	0.972	25.5	0.945	0.972	32.9	231	225	0.015	0.153	216	59	70	10	8
252fd	CH ₂ FCH ₂ CCl ₂ F	0.703	0.732	20.0	0.712	0.732	25.5	231	80	0.012	0.155	164	45	52	8	6
253ba	CH ₂ FCClFC ₂ F	3.66	3.86	72.9	3.730	3.86	113.8	370	450	0.017	0.131	814	221	381	42	31
253bb	CH ₂ CClFCF ₂	7.85	8.46	108.1	8.164	8.46	231.0	370	450	0.024	0.184	2265	665	1547	195	94
253ca	CH ₂ CICF ₂ CH ₂ F	4.23	4.47	79.3	4.324	4.47	130.1	370	450	0.018	0.135	964	263	485	52	37
253cb	CH ₂ CF ₂ CHClF	3.48	3.66	70.8	3.544	3.66	108.7	370	450	0.017	0.183	1077	293	492	56	41
253da	CH ₂ FCHClCHF ₂	1.67	1.74	43.6	1.684	1.74	55.5	370	450	0.012	0.118	335	91	118	16	13
253db	CH ₂ CHClCF ₂	1.02	1.06	30.2	1.027	1.06	35.5	370	450	0.009	0.12	209	57	68	10	8
253ea	CH ₂ CICF ₂ CHF ₂	1.44	1.5	39.1	1.452	1.5	48.5	370	450	0.011	0.113	277	75	95	13	10
253eb	CH ₂ FCHFCHClF	1.5	1.56	40.4	1.516	1.56	50.4	370	450	0.011	0.125	320	87	111	15	12
253ec	CH ₂ CHFCCl ₂ F	1.13	1.17	32.7	1.139	1.17	38.9	370	450	0.009	0.183	352	95	116	16	13
253fa	CHClFC ₂ CHF ₂	1.83	1.9	46.4	1.843	1.9	60.2	370	450	0.012	0.175	542	147	196	26	20

HCFC	Formula	Lifetimes (years)								Ozone Depletion Potential (ODP)	Radiative Efficiency (RE) W m ⁻² ppb ⁻¹	Global Warming Potential (Time Horizon, years)	Global Temperature change Potential (Time Horizon, years)			
		Global	Total Trop	Total Strat	Total OH Reactive Loss	Trop OH Reactive Loss	Strat OH Reactive Loss	O(¹ D) Reactive Loss	UV Photolysis Loss				20	100	20	50
253fb	CH ₂ ClCH ₂ C ₂ F ₃	1.05	1.09	30.8	1.054	1.09	36.3	370	450	0.009	0.121	216	58	70	10	8
253fc	CH ₂ FCH ₂ CClF ₂	1.48	1.54	39.9	1.489	1.54	49.6	370	450	0.011	0.194	487	132	168	23	18
261aa	CH ₂ CCl ₂ CH ₂ F	1.06	1.11	22.7	1.080	1.11	37.1	218	80	0.020	0.0727	132	36	43	6	5
261ba	CH ₂ CClFCH ₂ Cl	2.19	2.31	43.5	2.237	2.31	71.7	218	225	0.031	0.0827	312	84	118	15	12
261da	CH ₂ CICHClCH ₂ F	0.45	0.462	20.0	0.452	0.462	20.0	218	225	0.009	0.0338	26	7	8	1	1
261db	CH ₂ CHClCHClF	0.465	0.478	20.0	0.467	0.478	20.0	218	225	0.009	0.0625	50	14	15	2	2
261ea	CH ₂ ClCHFCH ₂ Cl	0.536	0.554	20.0	0.539	0.554	20.0	218	225	0.010	0.0493	45	12	14	2	2
261eb	CH ₂ CHFCHCl ₂	0.309	0.315	20.0	0.310	0.315	20.0	218	80	0.006	0.0618	33	9	10	2	1
261fa	CH ₂ CICH ₂ CHClF	0.572	0.591	20.0	0.575	0.591	21.0	218	225	0.011	0.0746	73	20	23	3	3
261fb	CH ₂ FCH ₂ CHCl ₂	0.332	0.339	20.0	0.333	0.339	20.0	218	80	0.006	0.0557	32	9	10	1	1
261fc	CH ₂ CCl ₂ F	0.614	0.638	20.0	0.621	0.638	22.5	218	80	0.012	0.137	145	39	45	7	5
262ba	CH ₂ CClFCH ₂ F	3.41	3.59	68.6	3.469	3.59	106.6	336	450	0.020	0.125	837	227	378	43	32
262ca	CH ₂ CF ₂ CH ₂ Cl	3.17	3.33	65.6	3.219	3.33	99.6	336	450	0.019	0.117	724	196	316	37	27
262da	CH ₂ FCHClCH ₂ F	0.924	0.956	27.7	0.929	0.956	32.4	336	450	0.009	0.0587	107	29	34	5	4
262db	CH ₂ CHClCHF ₂	0.642	0.662	20.8	0.644	0.662	23.3	336	450	0.007	0.0813	103	28	32	5	4
262ea	CH ₂ FCHFCH ₂ Cl	0.828	0.856	25.4	0.831	0.856	29.3	336	450	0.009	0.0657	107	29	34	5	4
262eb	CH ₂ CHFCHFCI	0.663	0.685	21.3	0.666	0.685	24.0	336	450	0.007	0.0982	128	35	40	6	5
262fa	CH ₂ CICH ₂ CHF ₂	0.801	0.828	24.8	0.804	0.828	28.4	336	450	0.008	0.0858	135	37	43	6	5
262fb	CH ₂ FCH ₂ CHFCI	0.873	0.902	26.5	0.877	0.902	30.7	336	450	0.009	0.0991	170	46	54	8	6
262fc	CH ₂ CH ₂ CF ₂ Cl	1.19	1.24	33.7	1.202	1.24	40.9	336	450	0.011	0.168	394	107	131	18	15
271ba	CH ₂ CClFCH ₃	5.05	5.37	83.4	5.190	5.37	153.4	308	450	0.028	0.106	1224	338	675	72	47
271da	CH ₂ CHClCH ₂ F	0.273	0.278	20.0	0.274	0.278	20.0	308	450	0.004	0.0261	17	5	5	1	1
271ea	CH ₂ CHFCH ₂ Cl	0.297	0.302	20.0	0.298	0.302	20.0	308	450	0.004	0.033	23	6	7	1	1
271fa	CH ₂ CICH ₂ CH ₂ F	0.339	0.345	20.0	0.339	0.345	20.0	308	450	0.004	0.0284	22	6	7	1	1
271fb	CH ₂ CH ₂ CHClF	0.492	0.506	20.0	0.494	0.506	20.0	308	450	0.007	0.0652	75	20	23	3	3

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